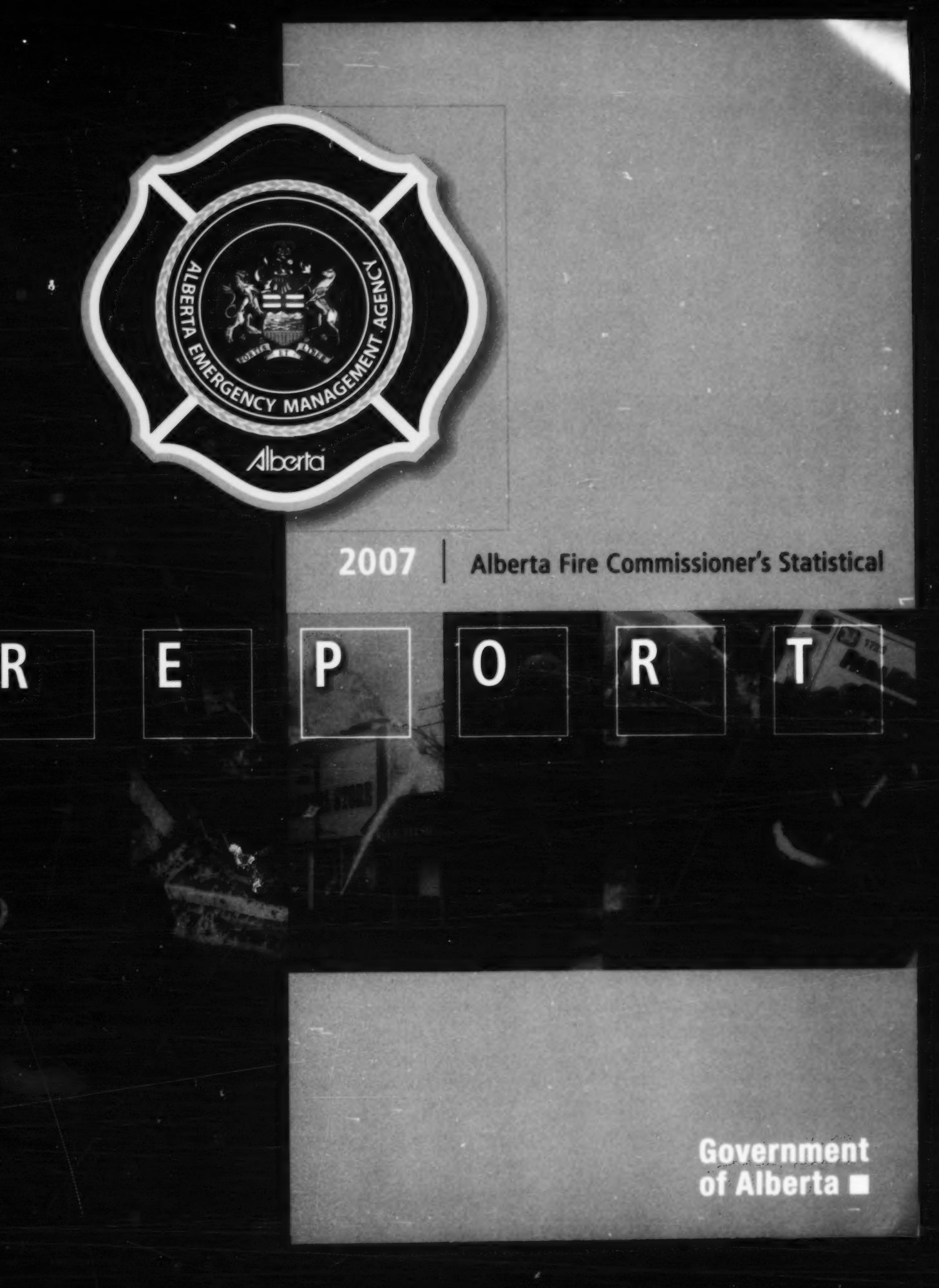

2007 | Alberta Fire Commissioner's Statistical

REPORT

Government of Alberta

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Minister's Message

Fires not only destroy homes, they can forever change lives.

Research on home fires show that in as little as three minutes, a fire can become deadly due to toxic smoke and burning synthetic materials present in drapes, carpeting and furniture. Fire prevention has never been more important.

The Alberta Emergency Management Agency works with communities, industry and government to protect Albertans from the effects of emergency events including fires.

The Fire Commissioner's 2007 Statistical Report provides detailed statistics about fires across Alberta. It is a resource for government and fire services to enhance fire safety and fire prevention measures.

Lets continue to work together to make Alberta the safest place to live, work and raise a family!

Hector Goudreau
Minister, Alberta Municipal Affairs
M.L.A. Dunvegan-Central Peace

Fire Commissioner's Message

A total of 5,296 fires in Alberta were reported to the Fire Commissioner at the Alberta Emergency Management Agency (AEMA) for the year 2007. These fires resulted in 23 deaths, 212 injuries and $327 million in direct property losses.

On average, during the 10-year period 1998 - 2007, there were 1.1 fire deaths per 100,000 population (range 0.7 - 1.8) in Alberta. Most fire deaths and injuries happen in places where Albertans feel the safest – their homes. Although only 33 per cent of all fires occurred in homes, 74 per cent of all fire deaths, 57 per cent of all fire injuries and 48 per cent of all property losses from fires occurred in this property class. Home fire safety continues to be a priority. Another perennial issue, "arson or set fires" (27% of all fires), requires broad-based reduction strategies. In addition, our seniors continue to have the highest risk for fire death in Alberta, with their numbers growing every year. Seniors deserve our close attention.

Safety related decisions that affect all Albertans are based primarily on good information. I therefore encourage all reporting agencies to continue their valuable contribution to the surveillance of fire incidents to keep Albertans safe.

Yours in safety!

Trent West
Fire Commissioner

Fire Deaths and Injuries 1998 - 2007 (Alberta and Canada)

Year	Population*	Fire Deaths	Alberta Fire Death Rate†	Canada Fire Death Rate**	Fire Injuries	Alberta Fire Injury Rate‡
1998	2,781,290	20	0.7	1.1	429	15.4
1999	2,871,271	51	1.8	1.3	385	13.4
2000	2,932,963	27	0.9	1.1	341	11.6
2001	2,962,664	43	1.5	1.1	393	13.3
2002	3,050,889	31	1.0	1.0	307	10.1
2003	3,091,831	24	0.8	0.9	323	10.4
2004	3,124,923	27	0.9	1.0	291	9.3
2005	3,242,110	38	1.2	0.9	247	7.6
2006	3,303,762	35	1.1	—	236	7.1
2007	3,416,498	23	0.7	—	212	6.2
Total		319			3,164	
Average		*32*	*1.1*		*316*	*10.4*

* Source: Alberta Municipal Affairs: http://municipalaffairs.alberta.ca/documents/ms/2007pop.pdf
** Source: Council of Canadian Fire Marshals and Fire Commissioners.

† Fire Death Rate: Number of fire deaths per 100,000 population.
‡ Fire Injury Rate: Number of fire injuries per 100,000 population.

- Based on known probable causes of death, smoke inhalation accounted for 70%, burns for 30%, and all other causes for 0% of all fire deaths in 2007. The probable causes of fire injuries were: burns (46%), smoke inhalation (32%) and physical injury, other injury (11% each).
- The annual fire death rates in Alberta (for 1998 - 2007) have fluctuated around an average of 1.1 death per 100,000 population, with a range of 0.7 to 1.8. The annual fire injury rates in Alberta have fluctuated around an average of 10.4 injuries per 100,000 population, with a range of 6.2 to 15.4.

Location of FIRE Deaths 2007

Beaver County	1
Calgary	3
Chauvin	1
Claresholm	1
Drayton Valley	1
Edmonton	5
Fort McMurray	1
Parkland County	1
Viking	1
Vulcan County	1
Fishing Lake Métis Settlement	1
Blood Tribe	1
Fox Lake #162	1
Regional Municipality of Wood Buffalo	1
Siksika #146	2
Wabasca #166D	1
Total	**23**

Causes of Fire Deaths

One and Two Family Dwellings, Apartments and Mobile Homes

Extension cord ignited wooden flooring	1
Arson to satisfy compulsive desires	1
Arsonist ignited waste paper (2); undetermined material (2)	4
Cigarette ignited fabric – victim asleep	1
Cigarette ignited wooden floor covering	1
Cigarette ignited bedding	1
Cigarette ignited paper decorations and clothing	1
Cigarette ignited upholstered furniture – victim asleep suspected impaired by drugs, alcohol or medication	1
Candle ignited bedding	1
Unknown	5

Long Term Residential Care for Disabled

Unknown source of ignition ignited synthetic clothing	1

Automobiles (includes cars, trucks, vans, single body units)

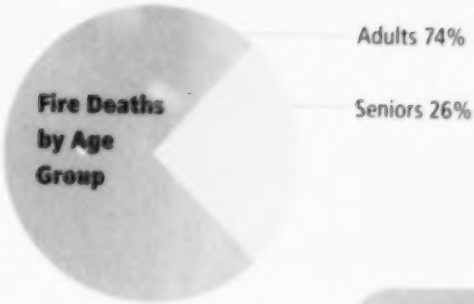
Motor vehicle crash ignited gasoline	1
Arsonist set fire to gasoline	1
Unknown	2

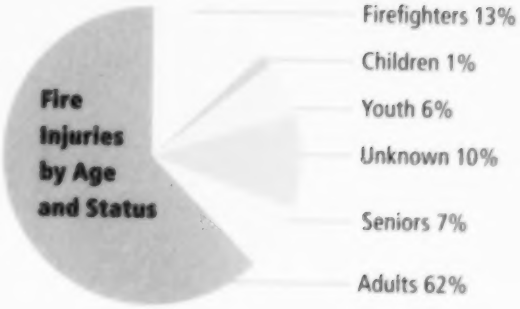
Trash/Rubbish/Recyclables

Ignition of garbage/trash/rubbish	1

Total Fire Deaths	**23**

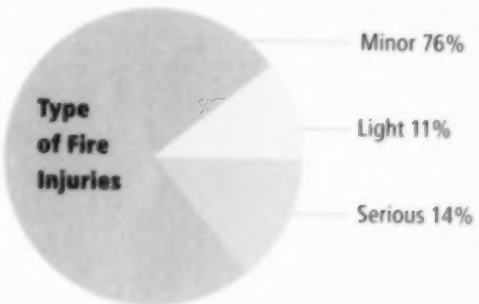
Fire Deaths and Injuries by Age and Status

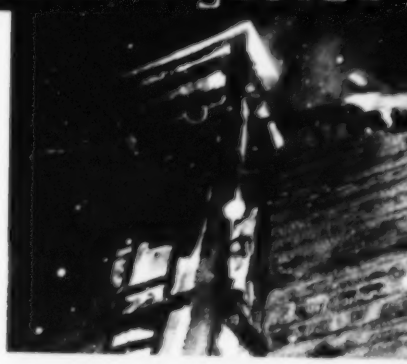




Seniors: 65 years of age and older
Adults: 18 - 64 years
Youth: 12 - 17 years
Children: 11 years and under
Note: No firefighters died in 2007 fires.

Definitions of injuries are provided in the glossary, page 18.





- On average, a fire-related death occurred every 16 days in Alberta in 2007.
- Of the 272 injuries, 20% were firefighters injured during fire duty and 13% were victims of the fire. Of the remaining victims of fire injuries, 62% were adults (18 - 64 years), 7% were seniors (65 years and older), 6% were youth (12 - 17 years) and 1% were children (11 years and under). Adults (18 - 64 years) had the highest number of injuries (169), followed by seniors (65 years and older) (19), youth (12 - 17 years) (16), unknown (10% - persons injured in fires for which no personal property or injury data was collected, for example, persons injured while attempting to save pets) (27), and children (11 years and under) (3).
- Of the 272 injuries, 76% were minor and included 1% who were treated and released from hospital emergency departments. A total of 11% of injuries were light and included 10% who were treated and released from hospital emergency departments and 1% who were admitted to hospital for less than 24 hours. Serious injuries (14%) included 13% who were admitted to hospital for 24 hours or more and 1% who died.
- There were 0.8 fire injuries reported per day, on average, in Alberta in 2007.
- The civilian adult male to female ratio was 2:1 for fire injuries and 3:1 for fire deaths.

Risk of Fire Deaths and Injuries

The risk of dying or being injured in a fire can be calculated as the fire death rate or fire injury rate – the number of casualties in an age group divided by the population of the age group. When fire deaths or injuries were calculated for the five-year period, 2003 - 2007, as rates per 100,000 population, per annum, using the above formula, it was found that:

- Seniors 65 years and older had the highest risk of dying in fires (fire death rate of 1.4), followed by adults 35 - 49 years (1.08), adults 50 - 64 years (1.00), adults 18 - 34 years (0.90), children 5 years and under (0.40), children 6 - 11 (0.31), and youth 12 - 17 (0.14).
- Civilian adults 18-34 had the highest risk of being injured in fires (fire injury rate of 7.6) followed by adults 35 - 49 (7.0), adults 50 - 64 (6.0), youth 12 - 17 (5.4), seniors 65 years and older (4.5), children 6 to 11 (2.5) and children 5 years and under (2.2).

Population data source: *Interactive Health Data Application,* Alberta Health and Wellness: www.ahw.gov.ab.ca/IHDA_Retrieval

- The highest number of fire deaths per month occurred in January, May and June (3 each), while the highest number of fire injuries was in July and December (24 each). A five-year analysis revealed most fatalities occurred in January (21%), followed by December (11%). As most injuries happened in January (12%), February (11%) and September (11%).
- The highest number of fire deaths per day of week occurred on Wednesdays (7) and Thursdays (4), while the highest number of fire injuries was on Saturdays (36) and Mondays (35). A five-year analysis revealed most fatalities (16-18%) occurred on Wednesdays, Thursdays, Fridays and Saturdays, and most injuries on Tuesdays, Thursdays, Fridays and Saturdays (15% each).
- Forty-four percent of all fire deaths occurred during sleeping hours between 10:30 p.m. and 6:29 a.m. The majority of fire injuries (45%) occurred between 2:30 and 10:29 p.m. A five-year analysis revealed fatalities were equally distributed at 35% between 2:30 and 10:29 p.m. and between 10:30 p.m. and 6:29 a.m., while most injuries happened between 2:30 and 10:29 p.m.

Fire Deaths and Injuries by Month

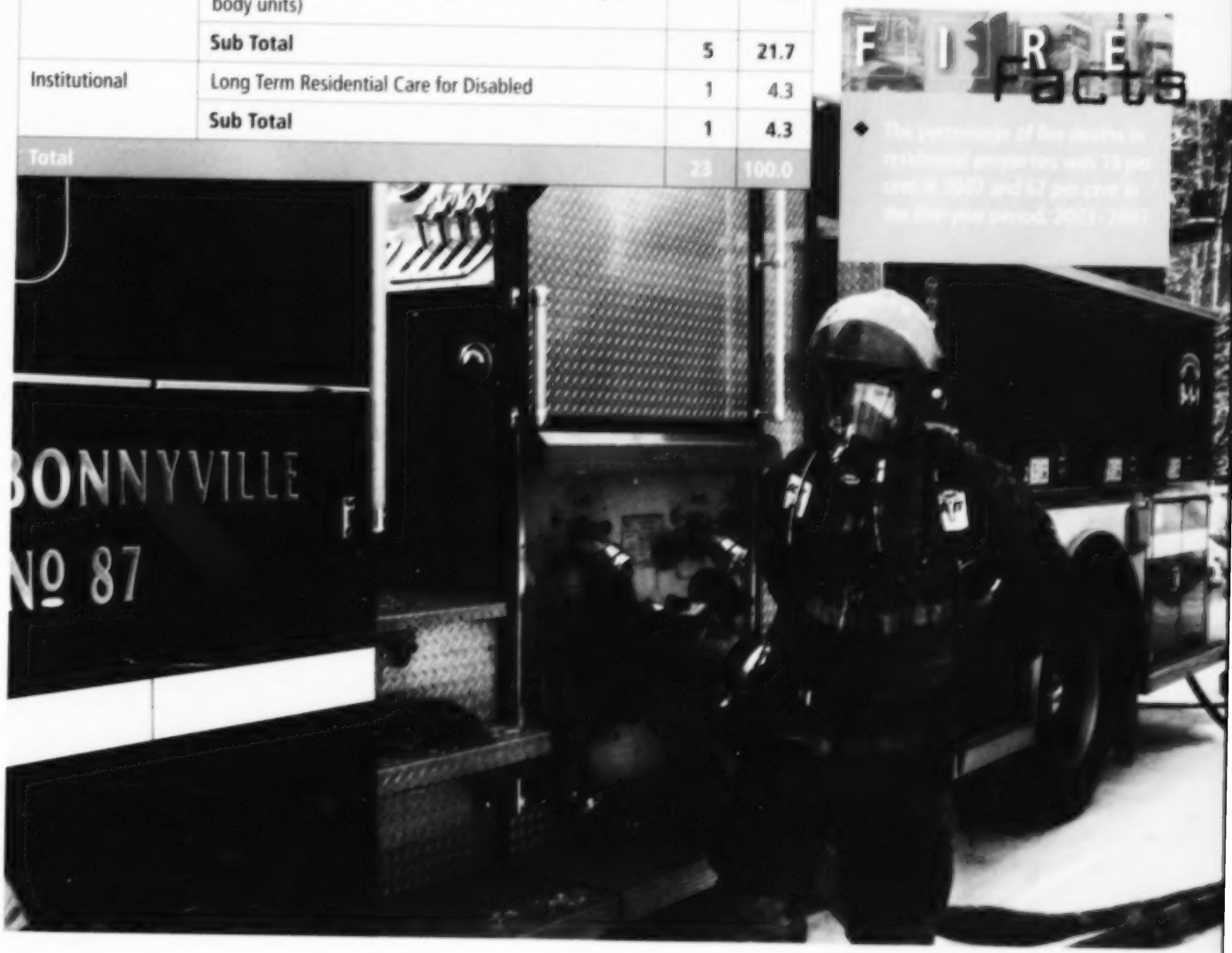
Fire Deaths and Injuries by Day of Week

Fire Deaths and Injuries by Time of Day

	Type			
Time Periods	Injuries		Fire Deaths	
	No.	%	No.	%
6:30 a.m. - 2:29 p.m.	59	27.8	5	21.7
2:30 p.m. - 10:29 p.m.	96	45.3	6	26.1
10:30 p.m. - 6:29 a.m.	55	25.9	10	43.5
Unknown	2	0.9	2	8.7
Total	212	100	23	100

Fire Deaths by Major Property Classification

Property Classification		Fire Deaths No.	Fire Deaths %
Residential	One and Two Family Dwellings	14	60.9
	Mobile Home (one or two family units)	2	8.7
	Apartments	1	4.3
	Sub Total	**17**	**73.9**
Special Property – Transportation Equipment	Trucks (incl. light trucks/van/single body units)	2	8.7
	Trash/Rubbish/Recyclable	1	4.3
	Cars	1	4.3
	Automobile (Including cars/light trucks/vans/single body units)	1	4.3
	Sub Total	**5**	**21.7**
Institutional	Long Term Residential Care for Disabled	1	4.3
	Sub Total	**1**	**4.3**
Total		23	100.0



FIRE Facts

- The percentage of fire deaths in residential properties was 73.9% per year in 2007 and 67 per cent in the five-year period 2003 - 2007.

Fire Injuries by Major Property Classification

Property Classification	No.	%
Residential		
One and Two Family Dwellings	86	40.6
Apartments	27	12.7
Mobile Home (1 or 2 family units)	8	3.8
Rooming, Boarding, Lodging House	8	3.8
Motel, Hotel	9	4.2
Other Residential	3	1.4
Sub Total	**141**	**66.5**
Special Property and Transportation Equipment		
Trucks, Cars	8	3.8
Other Vehicles	7	3.3
Brush/Grass & Light Ground Cover on Open Land/Field, Trash/Rubbish/Recyclable, Outdoor Property-Unclassified	7	3.3
Building Under Major Renovation, Vacant Property, Contractor's Shed	4	1.9
Sub Total	**26**	**12.3**
Miscellaneous Property	11	5.2
Industrial Manufacturing Properties	9	4.2
Assembly	4	1.9
Institutional	4	1.9
Mercantile	3	1.4
Total	212	100.0

- Most fire injuries occurred in residential properties (67%), particularly in one and two family dwellings (41%) and apartments (13%). In the five-year period, 2003 – 2007, residential properties accounted for 64 per cent of fire injuries, mostly in one and two family dwellings (36%) and apartments (15%).
- The majority of fire injuries were inflicted in fires related to cooking (23%), especially those involving cooking oil ignition (14%), followed by smoking (10%) and arson/vandalism (9%).

Major Causes of Fire Injuries

Causes	No.	%
Stove top fire in pan/deep fryer with ignition of cooking oil	30	14.2
Cigarette/smoker's material igniting bedding or a variety of other combustibles	22	10.4
Arson/vandalism	19	9.0
Electrical wiring, switches, panels, extension cords, power bars igniting building components (10) + motor vehicle battery, rectifier (3)	13	6.1
Furnaces, boilers, hot-water heaters, vent/flu pipes	11	5.2
Candles igniting a variety of combustibles	10	4.7
Stove top fires (all other fires except ignition of cooking oil)	10	4.7
Gasoline or propane ignition	9	4.2
Other cooking appliances – ovens, barbecues, separate deep fat fryers, etc.	8	3.8
Chemical reaction, spontaneous combustion	7	3.3
Portable space heater	7	3.3
Cutting, welding, other torches	6	2.8
Other	33	15.6
Unknown	27	12.7
Total	212	100.0

Fire Losses in Alberta 1998 - 2007

Year	Fires	Deaths	Injuries	$ Losses	Adjusted $ Losses*
1998	6,579	20	429	139,492,065	156,381,238
1999	6,379	51	385	146,414,201	160,190,591
2000	6,457	27	341	158,724,441	167,962,371
2001	7,021	43	393	229,231,932	237,054,738
2002	5,994	31	307	272,588,413	272,588,413
2003	5,647	24	323	348,481,771	333,794,799
2004	5,140	27	291	202,740,018	191,444,776
2005	5,196	38	247	450,423,712	416,673,184
2006	5,135	35	236	213,725,990	190,316,999
2007	5,296	23	212	326,461,771	276,897,176
Total	58,844	319	3,164	2,488,284,314	2,403,304,289
Average	*5,884*	*32*	*316*	*24,882,843*	*240,330,430*

*Adjusted losses were calculated from actual losses using the Annual Consumer Price Index (C.P.I.) figures for Alberta obtained from Statistics Canada (2002 CPI = 100).

- Over the 10-year period (1998 - 2007), the annual number of fires ranged from a low of 5,140 (2004) to a high of 7,021 (2001). The total number of fires averaged 5,884. Whether this variance is real or due to over-reporting in some years is not clear.
- The incidence of all fire-related deaths and fire injuries have fluctuated between 20 (2004) and 51 (1999), and 212 (2007) and 429 (1998), respectively.
- From a total of 5,296 fires during 2007, there were 3,043 structural fires (58%), 1,935 vehicle fires (37%) and 307 outdoor fires (6%).
- There were 15 destructive fires per day, on average, in Alberta during 2007. Direct property losses from fires were on average approximately $894,456 per day and $61,643 per fire.

Alberta Fire Losses

Fire Rates and Per Capita Losses 1998 - 2007

Year	Population	Fires	Fire Rate*	Loss Estimate	$ Loss/Capita
1998	2,781,290	6,579	2.4	139,492,065	50.2
1999	2,871,271	6,379	2.2	146,414,201	51.0
2000	2,932,963	6,457	2.2	158,724,441	54.1
2001	2,962,664	7,021	2.4	229,231,932	77.4
2002	3,050,889	5,994	2.0	272,588,413	89.3
2003	3,091,831	5,647	1.8	348,481,771	112.7
2004	3,124,923	5,140	1.6	202,740,018	64.9
2005	3,242,110	5,196	1.6	450,423,712	138.9
2006	3,303,762	5,135	1.6	213,725,990	64.7
2007	3,416,498	5,296	1.6	326,461,771	95.6

*Fire Rate = Number of fires per 1,000 population.

Fire Losses Related to Economic Indices 1998 - 2007

Year	Fire Losses ($)	Gross Domestic Product ($ million)*	% of GDP	Personal Income ($ million)*	% of Personal Income
1998	139,492,065	107,439	0.13	78,279	0.18
1999	146,414,201	117,080	0.13	81,151	0.18
2000	158,724,441	144,789	0.11	89,094	0.18
2001	229,231,932	151,274	0.15	98,131	0.23
2002	272,588,413	150,594	0.18	101,072	0.27
2003	348,481,771	170,113	0.20	105,664	0.33
2004	202,740,018	189,743	0.11	115,269	0.18
2005	450,423,712	219,810	0.20	128,285	0.35
2006	213,725,990	238,410	0.09	145,775	0.15
2007	326,461,771	256,915	0.13	159,030	0.21

*Source: Statistics Canada, *Provincial and Territorial Economic Accounts: Data Tables*, catalogue number 13-018-X.

- The province has experienced an average fire rate of 1.9 during the period 1998 to 2007.
- As a percentage of gross domestic product, fire losses have increased by 44% between 2006 and 2007. As a percentage of personal income, fire losses have increased by 40% over the same period.
- On average, there were 441 fires per month in 2007. This average was exceeded in July (+54%) followed by October (+13%). On average, direct property losses averaged $27 million per month. This average was exceeded in July (+122%) and in November (+26%).
- On average there were 757 fires per day of week; this average was exceeded on Saturdays (+35%). Property losses averaged $41M per day of week and this was exceeded on Saturdays (+32%).
- Where the time of fire was known, the number of fires was highest between 4 and 8 p.m. (19%) and 12 noon and 4 p.m. (18%). Dollar losses were highest between 4 a.m. - 8 a.m. (21%).

Fire Losses by Major Property Classification

Major Property Classification	Fires	%	$ Losses	% of $ Losses
Special Property – Transportation Equipment	2,236	42	48,890,165	15.0
Residential	1,897	36	167,518,569	51.3
Miscellaneous Property	356	7	11,935,477	3.7
Storage Properties	336	6	28,105,667	8.6
Mercantile	154	3	18,928,757	5.8
Assembly	131	2	18,569,495	5.7
Industrial Manufacturing Properties	97	2	20,228,785	6.2
Business and Personal Service	60	1	10,531,434	3.2
Institutional	29	1	1,753,422	0.5
Total	5,296	100	326,461,771	100.0

Fire Losses by Major Sources of Ignition

Major Sources of Ignition	Fires	%	$ Losses	% of $ Losses
Not Determined	1,493	28	110,526,683	33.9
Smoker's Material and 'Open' Flames	1,173	22	59,491,880	18.2
Exposure	619	12	31,108,739	9.5
Miscellaneous	520	10	39,065,918	12.0
Electrical Distribution Equipment	519	10	26,647,138	8.2
Cooking Equipment	382	7	14,926,048	4.6
Heating Equipment	243	5	19,080,078	5.8
Other Electrical Equipment	163	3	8,789,497	2.7
Appliances and Equipment	158	3	11,328,619	3.5
No Igniting Object	26	0	5,497,171	1.7
Total	5,296	100	326,461,771	100.0

FIRE facts

- The largest number of fires occurred in ground transport vehicles (28%), one/two family dwellings (25%), followed by outdoor properties (8%) and apartments (6%).
- Property classes with the highest dollar losses were one and two family dwellings ($115M or 35%), apartments ($37K or 11%), ground transport vehicles ($18 or 5%), buildings under construction ($11M or 3%) and warehouse (self-storage/mini-storage) ($7K or 2%).
- The most frequent areas of fire origin were in vehicle (31%), outside (18%), function (17%) and structural areas (9%).
- The most common sources of ignition in Alberta fires in 2007 were: Exposure fires from attached structures, vehicles, outdoor properties, etc. (10%); electrical distribution equipment, wiring, lamps (9%); cooking equipment, primarily stoves and other cooking appliances (7%); smoker's materials such as cigarettes (7%); internal combustion engine (4%). The highest property loss was attributed to fires where sources of ignition were unknown ($110M or 28%).
- Where known, the most common fuel or energy associated with the source of ignition were:
  - Electricity (20%)
  - Exposure Fire (12%)
  - Match/Lighter Not Related to Smoking (11%)
  - Smokers Material-Cigarette/cigar/pipe/match/lighter (6%)
  - Gasoline (3%)
  - Coal/Wood/Coke/Paper, etc. (3%).

Fire Losses by Major Acts or Omissions

Major Acts or Omissions	Fires	%	$ Losses	% of $ Losses
Arson or 'Set' Fires	1,427	27	61,140,246	18.7
Mechanical, Electrical Failure, Malfunction	1,250	24	65,273,301	20.0
Not Determined	780	15	68,891,458	21.1
Human Failing	615	12	32,655,353	10.0
Misuse of Source of Ignition	380	7	36,646,622	11.2
Misuse of Material Ignited	276	5	16,306,684	5.0
Act or Omission Not Applicable	204	4	14,674,426	4.5
Construction, Design, Installation Deficiency	102	2	7,606,173	2.3
Miscellaneous	102	2	14,787,778	4.5
Misuse of Equipment	82	2	5,538,566	1.7
Vehicle Accident	78	1	2,941,164	0.9
Total	5,296	100	326,461,771	100.0

Fire Losses by Major Materials First Ignited

Major Materials First Ignited	Fires	%	$ Losses	% of $ Losses
Not Determined	1,695	32	130,566,148	40.0
Miscellaneous	826	16	46,830,339	14.3
Flammable and Combustible Liquids	674	13	31,003,528	9.5
Building Components	619	12	53,503,974	16.4
Wood, Paper Products	467	9	13,967,070	4.3
Agricultural Products	308	6	12,972,804	4.0
Chemicals	260	5	10,928,523	3.3
Furniture, Furnishings	198	4	19,362,179	5.9
Clothing, Textiles	180	3	5,310,089	1.6
Flammable Gases	69	1	2,017,117	0.6
Total	5,296	100	326,461,771	100.0

FIRE facts

- Arson and 'set' fires accounted for 27% of all fires in Alberta in 2007. This means that approximately one out of four fires was deliberately set.
- The other common acts or omissions were mechanical, electrical failure, malfunction (17%); electrical short circuit (7%); ignorance of hazard (6%); misuse of smoker's material (4%); overheated cooking oil, grease, wax (2%); distracted/preoccupied (2%) and combustible placed too close to heat (2%). Acts or omissions could not be determined in 15% of fires ($69M) while arson or other set fires could not be determined in another 11% of fires ($40M).
- Where known, materials most commonly ignited first were building components (8%); garbage/trash/rubbish (6%); gasoline (5%); Electric insulation in electric equipment (4%); and cooking oil/fat (3%). Materials first ignited were not determined in 32% of the fires and these fires accounted for $131M in property losses.

Initial Detection of Fires

Method of Initial Detection	Fires	%
Visual Sighting – Personal Detection	4,637	88
Smoke Alarm – Single Station	138	3
Smoke Detector – Linked To Alarm System	88	2
Initial Detection – Unclassified	65	1
No Initial Detection – Burnt Out	65	1
Automatic Sprinkler System	19	0
Heat Detector – Linked To Alarm System	16	0
Automatic System Other Than Sprinkler	3	0
Heat Alarm – Single Station	3	0
Initial Detection – Unknown	262	5
Total	5,296	100

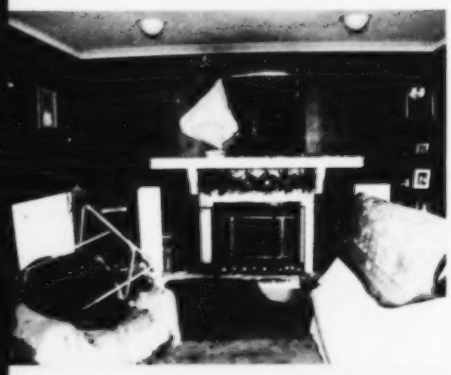
Fires by Method of Fire Control and Extinguishment

Method of Fire Control and Extinguishment	Fires	%
Fire Department – Water	3,039	57.4
Hand Fire Extinguisher	496	9.4
Makeshift Fire Fighting Aid	404	7.6
Burned Out	331	6.3
Fire Department – Other Than Water	209	3.9
Standpipe System	91	1.7
Miscellaneous – Unclassified	66	1.2
Sprinkler System	22	0.4
Fixed System Other Than Sprinklers	10	0.2
Miscellaneous – Unknown	628	11.9
Total	5,296	100.0

FIRE Facts

- Visual sighting or other means of personal detection (88%) was the primary means of initial detection of fires in 2007, while smoke alarms/detectors accounted for 5%.
- Where the method of fire control and extinguishment is known, fire departments extinguished 57% of all reported fires. The other common methods of fire extinguishment were hand fire extinguishers (9%) and "makeshift" fire fighting aids (8%).

Alberta Home Fire Losses



Home Fires by Type of Home

Type of Home	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
One and Two Family Dwellings	1,327	76	14	82	86	71	114,604,526	74
Apartments, Tenements, Flats	339	19	1	6	27	22	36,891,986	24
Mobile Homes	79	5	2	12	8	7	3,896,154	3
Total	1,745	100	17	100	121	100	155,392,666	100

Home Fires by Major Areas of Fire Origin

Area of Origin	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
Kitchen/Cooking Area	349	20	0	0	43	36	15,404,205	10
Sleeping (Under Five Occupants)	165	9	3	18	26	21	17,442,251	11
Lounge/Living Room	127	7	5	29	12	10	15,334,873	10
Exterior Wall	112	6	0	0	1	1	8,028,150	5
Court/Patio/Terrace	89	5	0	0	0	0	12,758,489	8
Laundry Area	58	3	0	0	3	2	3,515,817	2
Vehicle (Garage)	50	3	1	6	4	3	5,178,698	3
All Other Areas	556	32	7	41	29	24	54268152	16
Area of Origin – Unknown	239	14	1	6	3	2	23,462,031	15
Total	1,745	100	17	100	121	100	155,392,666	100

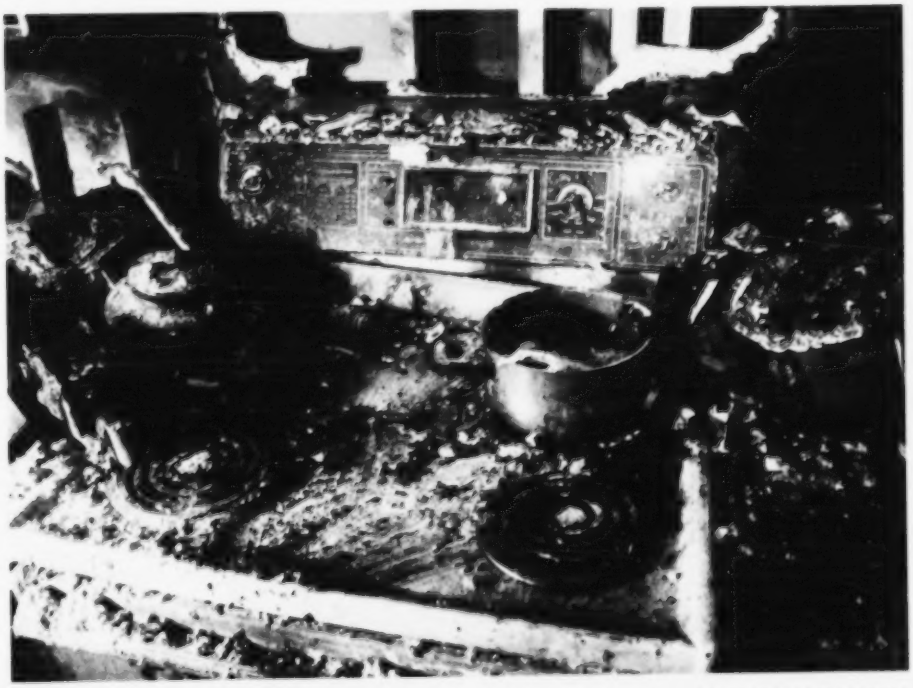
- Thirty- three percent of all fires in Alberta occurred in homes. Home fires accounted for 74% of all fire deaths (17 out of 23), 57% of all fire injuries (121 out of 212) and 48% of all property losses ($155M out of $327M) from fires.
- Most Alberta home fires started in kitchens (20%), bedrooms (9%), living rooms (7%), and exterior walls (6%).

Major Known Causes of Home Fires

Fire Causes	Fires	% of Fires	Deaths	Injuries	$ Losses
Arson/Set Fire	372	21	6	10	30,456,963
Cooking	289	17	0	38	10,529,959
Smoking	178	10	5	21	27,352,066
Heating Equipment Related*	143	8	0	12	14,867,938
Electrical Distribution Equipment and Light/Fluorescent Bulb	172	10	1	5	17,290,129
Exposure Fire**	97	6	0	0	10,783,879
Candle (Accident)	54	3	0	9	3,794,553
Appliance/Equipment Related	40	2	0	3	4,653,107
Clothes Dryer	30	2	0	0	1,766,049
Child Fire-play	28	2	0	3	1,361,051
Flammable/Comb. Liquid Ignition	28	2	0	4	2,067,883
Other Causes – Unknown	314	18	5	16	30,469,089
Total	1,745	100	17	121	155,392,666

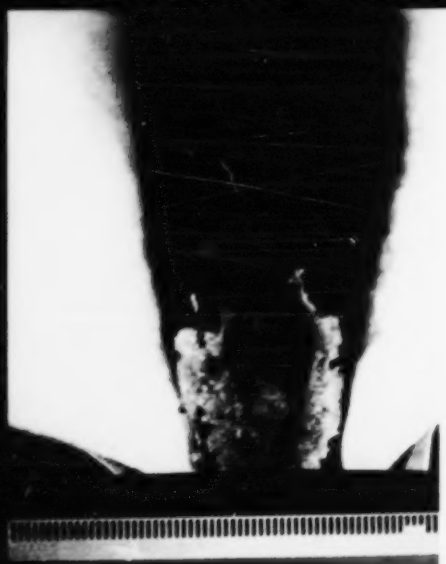
* Heating equipment includes furnaces, water heaters, fireplaces, wood stoves, space heaters and associated chimneys/vents.

** An exposure fire is a fire that spreads from one property to an adjacent property.



Fire Facts

- Most home fires originated in the home fire source area of the kitchen/cooking area.
- About 30% of all cooking related fires involved the ignition of cooking oil. These fires accounted for 29% of all cooking related fire injuries.
- The highest percentage of deaths occurred where fires started in the living room (29%) and sleeping areas (18%).
- Most kitchen fires started on stove/top burners (70%), and these caused 61% of losses in kitchen fires.
- Major sources of ignition in bedroom fires were candles (16%), smoker's material (smoking materials) (15%), followed by electrical energy equipment/appliances (13%).
- Major sources of ignition in living rooms were cigarettes/smoker's material (20%), fireplace heating equipment (14%), electrical energy equipment/appliances (13%), and candles (11%). Arson incidents accounted for 10% of living room fires.
- Where fires started in the washer and dryer area, the leading ignition was electrical energy equipment/appliances (47%), followed by clothes dryers (27%), and cigarettes/smoker's materials (10%) were the main sources of ignition.
- Electrical energy equipment/appliances were the main source of ignition when fires started in a bathroom (39%).
- Fifty per cent of laundry area fires started in clothes dryers.
- Fires in exterior balcony/porch areas were primarily from cigarettes/smoker's materials (44%).
- When fire originated in heating equipment rooms the main source of ignition was furnaces (34%).



Home Fires by Smoke Alarm Operation

Smoke Alarm Installation

Status	Fires	% of Fires	Deaths*	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
Not Installed	954	55	10	59	36	30	73,012,943	47
Installed	791	45	7	41	85	70	82,379,723	53
Total	1,745	100	17	100	121	100	155,392,666	100

*Please refer to the research article titled *"Making sense of smoke alarm data and home fire deaths,"* in the August 2004 issue of *Alberta FIREnews* (pages 16 - 19), for a detailed statistical analysis of home fire deaths in relation to smoke alarms.

Alberta FIREnews is available at www.aema.alberta.ca/ps_alberta_fire_news.cfm

Activation of Smoke Alarms

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
Activated	286	36	1	14	48	56	24,747,805	30
Not Activated	240	30	1	14	19	22	8,012,434	10
Activation – Unknown	265	34	5	71	18	21	49,619,484	60
Total	791	100	7	100	85	100	82,379,723	100

Alarm Assistance to Occupants

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
Alarm assisted occupants to evacuate	201	70	0	0	31	65	20,376,707	82
Alarm did not assist occupants to evacuate	41	14	1	100	11	23	1,050,748	4
Not applicable/no occupants	29	10	0	0	0	0	2,384,066	10
Occupant evacuation unknown	15	5	0	0	6	13	936,284	4
Total	286	100	1	100	48	100	24,747,805	100

FIRE facts

In 2007, 55% of homes where fire occurred did not have smoke alarms installed. Lack of power source was the major reason the alarms failed to activate (19%).

Reasons – Alarms Did Not Assist

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
Unnecessary to evacuate	35	85	0	0	8	73	563,008	54
Under the influence of drugs/alcohol	3	7	0	0	2	18	37,600	4
Alarm inaudible	1	2	0	0	1	9	364,140	35
Physical/mental challenge	1	2	0	0	0	0	75,500	7
Unable to evacuate-age related	1	2	1	100	0	0	10,500	1
Total	41	100	1	100	11	100	1,050,748	100

Reasons – Alarms Not Activated

Status	Fires	% of Fires	Deaths	% of Deaths	Injuries	% of Injuries	$ Losses	% of $ Losses
Not enough smoke	163	68	0	0	6	32	3,991,152	50
No battery	25	10	1	100	3	16	1,678,803	21
Mechanical failure	15	6	0	0	2	11	787,087	10
Unsuitable location*	14	6	0	0	1	5	555,801	7
AC not connected/ disabled	13	5	0	0	3	16	695,217	9
Dead battery	10	4	0	0	4	21	304,374	4
Total	240	100	1	100	19	100	8,012,434	100

*Since most of these fires originated in outside areas or structural areas of homes, an adequate amount of smoke did not reach inside the homes to trigger the smoke alarms.

For a more detailed description of the following variables, please refer to the *Alberta Fire Statistics Reporting Manual* available on the Alberta Emergency Management Agency website at www.aema.alberta.ca/ps_fire_reporting.cfm

Act or Omission

The human element by which someone has done something (an act) or failed to do something (an omission). The act or omission indicates whether the fire was deliberate, neglectful or accidental.

Incendiary or Set Fires
Includes arson, suspected incendiarism, riot, mischief or vandalism.

Misuse of Source of Ignition
Includes disposal of smoker's material, thawing, inadequate control of an open fire, children playing with source of ignition, welding or cutting too close to combustible material or torch too close to combustible material.

Misuse of Material Ignited
Includes fuel spilled accidentally, improper fuelling technique, cleaning or washing parts, improper container, overheated cooking oil, combustible placed too close to heat, and improper storage.

Mechanical and Electrical Failure or Malfunction
Includes part failure, automatic or manual control failure, electrical short circuit and part worn out.

Construction, Design or Installation Deficiency
Includes construction or design deficiency, installation too close to a combustible, other installation deficiency or over fusing.

Misuse of Equipment
Overfuelling, includes any misuse of equipment or tools.

Human Failing
Includes person asleep, temporary loss of judgement, physical disability, panic, influence of alcohol or drugs and ignorance of hazard.

Area of Origin

The area of a building or vehicle where the fire started.

Means of Egress
The area allowing an individual transit or a way of going out. Includes hallway, stairway, escalator, lobby and elevator.

Assembly, Sales Area
Areas where groups of people gather. Includes theatre, arena, lounge, living room, sales or show room, library, museum and sports facility.

Function Area
The area where a mode of action or activity is undertaken. Includes sleeping area, dining area, bar, washroom, office, laboratory, printing and photographic reproduction area, kitchen, laundry room, operating room, performance area and manufacturing area.

Storage Area
The area inside a building where items are stored. Includes product storage area, closet, equipment area, records storage area, shipping and receiving area, trash and rubbish area, vehicle garage and agricultural product storage area.

Service Facilities
Conveyance items such as dumbwaiters, service shafts, laundry and garbage chutes, heating and cooking ducts and chimneys or gas vents.

Structural Area
Includes crawl space, balcony, ceiling and floor assembly, wall assembly, exterior wall or exterior roof and awning or canopy.

Vehicle Area
Includes engine area, fuel area, control area, passenger area and cargo area.

Outside Area
Includes open area such as lawn, field or park, court, patio, parking area, outdoor storage area and trash or rubbish area.

Death

A person killed accidentally as a direct result of a fire or a person who dies from a fire injury within one year following the date on which the injury was sustained.

Fire Death
Refers to a person who died as a direct result of a fire, either by smoke inhalation, burns or physical injury, or where the Medical Examiner's Office has concluded the cause of death was due to fire.

Fuel or Energy

The fuel associated with the source of ignition. Includes coal, wood, fuel oil, gasoline, natural gas or other fuel gases, smoker's material, electricity, lightning or exposures.

Injuries

A person accidentally injured as a direct result of a fire (a member of the fire department accidentally injured while in the process of fighting a fire or injured as a result of an accident while en route to or returning from the scene of an actual fire is considered a fire action injury).

Minor Injury
An injury that does not require hospitalization of over a 24-hour period or absence from work of not more than one full day.

Light Injury
An injury that required admission to a hospital of over 24 hours up to 48 hours and/or absence from work for a period of two to fifteen days.

Serious Injury
An injury that required admission to a hospital for a period of more than 48 hours and/or an absence from work for a period exceeding fifteen days.

Material First Ignited

The actual material that ignites and creates the fire condition.

Structural Components, Finish Materials
Includes roof covering, wall covering, floor covering, structural component, ceiling covering and insulation.

Furniture, Furnishings
Includes furniture, ironing board, mattress, bedding, drapery and broom, mop or brush.

Clothing, Textiles
Includes clothing, fabric, fur and tarpaulin.

Wood, Paper Products
Includes wood, wood shavings, paper, cardboard and paper stock.

Flammable Liquids
Includes gasoline, fuel oil, flammable liquids, paint, varnish, tar, asphalt, polish and wax.

Flammable Gases
Includes natural gas, propane, anaesthetic gas, acetylene and hydrogen.

Chemicals
Includes starch, flour, cellulose nitrate, plastic, oxidizing material, magnesium and alloys, titanium, natural or synthetic rubber and ammonium nitrate.

Agricultural, Forestry Products
Includes fibres, grains, hay, trees, felled timber, grass, fertilizer and manure.

Miscellaneous
Includes coal, garbage, trash, oily rags and artificial trees.

Property Classification

The principal use or occupancy of the building.

Assembly
Property for the gathering of persons for civic, political, travel, religious, social, educational or recreational purposes. Includes theatres, amusement or recreation places, schools, colleges, universities, churches, social or sport clubs, libraries and museums, eating establishments and passenger terminals.

Institutional
Property for medical treatment, or care of persons suffering from illness, disease or infirmity, for the care of infants, convalescents or aged persons and for penal or corrective purposes. Includes prisons, jails, reformatories, homes for the aged, children's hospitals, hospitals and clinics.

Residential
Property in which sleeping accommodation is provided for normal residential purposes. Includes one and two family dwellings, apartments, rooming or boarding houses, hotels, motels, dormitories and mobile homes.

Glossary

Business and Personal Service
Property for conducting business. Includes offices, personal services such as hairdressing and data processing or storage facilities.

Mercantile
Property used for the display and sale of merchandise. Includes food and beverage sales, textile and clothing sales, furniture and appliance sales, books and specialty sales, recreational and hobby supply sales, repair shops, laundries, vehicle and boat sales and department or variety stores.

Industrial Manufacturing Properties
Property where raw materials are transformed into new products and where the component parts of manufactured products are assembled. Includes chemical, petroleum, paint and plastic manufacturing; wood, furniture, and paper manufacturing; metal product and electrical equipment manufacturing; food processing; beverage, tobacco, soap and margarine manufacturing; textile manufacturing; footwear and wearing apparel manufacturing; and vehicle and related equipment manufacturing.

Storage Properties
Property used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals. Includes agricultural product storage; textile, fibre and clothing storage; processed food and beverage storage; flammable liquids, gas and petroleum products storage; wood, furniture, and paper products storage; chemical, paint and plastic storage; metal products, machinery, and electrical appliance storage and vehicle storage.

Special Property and Transportation Equipment
Mainly outdoor property and transport equipment. Includes outdoor property, piers, buildings under construction or demolition, watercraft, rail transport vehicles, ground transport vehicles, aircraft and other special equipment.

Miscellaneous
Includes laboratories, farm facilities, outbuildings, utilities, glass and pottery manufacturing, mining, communications and nucleonics.

Source of Ignition

The actual equipment, device or object which brings about ignition.

Cooking Equipment
Includes stove, range, food warming appliance, deep fat fryer, broiler and portable cooking unit.

Heating Equipment
Includes central heating unit, service water heater, space heater, fireplace, chimney, flue pipe and steam or hot water pipe.

Appliances and Equipment
Includes dryer, air conditioning equipment, pressing iron and incinerator.

Smoker's Material and 'Open' Flames
Includes cigarettes, pipes, cigars and/or matches, lighters when used in conjunction with smoking. Includes matches and lighters not associated with smoker's material, candles, cutting torches, welding equipment and hot ashes.

Exposure
Includes exposure from an attached or detached structure, lumber yard, open fire, forest, grass and brush.

Miscellaneous
Includes internal combustion engine, heat treatment equipment, industrial oven, tar pot, fireworks, conveyors, commercial and industrial machinery and chemical reactions.

2007 digital images and photos submitted by fire and emergency services to enhance this report are gratefully acknowledged.

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Alberta Response Readiness Centre (ARRC)

24 Hour: 1-866-618-2362, Email: aema@gov.ab.ca, www.aema.alberta.ca

Northwest Region

3201, Provincial Building
10320 - 99 Street
Grande Prairie, AB T8V 6J4
24 Hour: 1-866-618-2362

Bag 900, Box 24
9621 - 96 Avenue
Peace River, AB T8S 1T4
24 Hour: 1-866-618-2362

Northeast Region

14515 - 122 Avenue NW
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24 Hour: 1-866-618-2362

407, Provincial Building
5025 - 49 Avenue
St. Paul, AB T0A 3A4
24 Hour: 1-866-618-2362

North Central Region

14515 - 122 Avenue NW
Edmonton, AB T5L 2W4
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Central Region

Suite 207, Provincial Building
4920 - 51 Street
Red Deer, AB T4N 6K8
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East Central Region

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Camrose, AB T4V 4E8
24 Hour: 1-866-618-2362

Suite 207, Provincial Building
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Red Deer, AB T4N 6K8
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South Central Region

#250, 7015 Macleod Trail SW
Calgary, AB T2H 2K6
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